IN THE CLAIMS:

1.   (Previously Presented) A nonlinear broadcast system that broadcasts material data by executing a plurality of transfer processes of the material data for broadcast in parallel for at least a certain duration, the transfer processes for broadcast utilizing a common hardware resource, the nonlinear broadcast system comprising:

5   material storage means that is a recording medium storing a video data file including material data;

cache means that is a memory temporarily storing the material data read from the recording medium;

processing target specification information storage means storing processing target

10   specification information that specifies which range in a video data file is indicated by the material data that is a processing target of each of the plurality of transfer processes;

duration information storage means storing duration information showing durations, in each of which a different one of the transfer processes for broadcast is scheduled to be executed;

first allocation means for allocating a required amount of the hardware resource to each

15   transfer process for broadcast based on the processing target specification information, for the corresponding duration shown by the duration information;

available amount calculation means for calculating an available amount of the hardware resource remaining after the first allocation means has allocated the required amount to each transfer process for broadcast;

20   second allocation means for allocating, to one or more background transfer processes that are processes other than the transfer processes for broadcast, as much amount of the hardware resource as possible, so as not to exceed the calculated available amount; and

process execution means for executing (a) each transfer process for broadcast utilizing

the amount of hardware resource allocated by the first allocation means, and (b) each

25   background transfer process utilizing the amount of hardware resource allocated by the second

allocation means, wherein

the hardware resource is a band for an access to the recording medium,

when processing targets of the plurality of transfer processes indicate a same range in a

same video data file, the first allocation means does not exceptionally allocate the required

30   amount of the hardware resource to one of the plurality of transfer processes executed in a later

duration, and

the process execution means executes the transfer process to which the required amount

of the hardware resource is not exceptionally allocated, by accessing the cache means to read the

material data instead of accessing the recording medium.

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2.   (Original) The nonlinear broadcast system of Claim 1,

wherein the available amount calculation means calculates the available amount of the

hardware resource, every time when one of a start time and an end time of each duration shown

by the duration information is reached.

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3.   (Original) The nonlinear broadcast system of Claim 2,

wherein the material storage means is a readable and writable recording medium,

the hardware resource is a band for an access to the recording medium,

the first allocation means allocates a required bandwidth of the band to each transfer

5   process for broadcast,

the available amount calculation means calculates an available bandwidth by subtracting

the bandwidth allocated to each transfer process for broadcast by the first allocation means from

a total bandwidth of the band for the access to the recording medium,

the second allocation means allocates, to each background transfer process, as much

10 bandwidth of the band as possible, so as not to exceed the calculated available bandwidth, and

the process execution means executes (a) each transfer process for broadcast utilizing the

bandwidth allocated by the first allocation means, and (b) each background transfer process

utilizing the bandwidth allocated by the second allocation means.

4. (Original) The nonlinear broadcast system of Claim 3,

wherein each background transfer process is a process for writing the material data to the

recording medium, and

each transfer process for broadcast is a process for reading the material data from the

5 recording medium.

5. (Original) The nonlinear broadcast system of Claim 4,

wherein the material data is video data,

the recording medium is a hard disc, and

the nonlinear broadcast system comprises:

5 a transmitting device for converting the video data so as to be in a broadcast format, and

broadcasting the converted video data;

a plurality of nonlinear editing devices each being provided so as to correspond to one

hard disc and including a coder-decoder, the first allocation means, the second allocation means,

the available amount calculation means, and the process execution means, the process execution

10   means executing each transfer process for broadcast for reading the video data from the hard disc

corresponding to the nonlinear editing device and outputting the read video data via the coder-

decoder; and

a switcher for selecting video data, out of video data outputted by each of the nonlinear

editing devices, and sending the selected video data to the transmitting device.

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6.   (Original) The nonlinear broadcast system of Claim 5,

wherein each nonlinear editing device further includes

effect addition means for adding an effect to the video data when the video data is

outputted via the coder-decoder.

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7.   (Original) The nonlinear broadcast system of Claim 4, further comprising

transfer complete time display means for obtaining an amount of data to be transferred by

each background transfer process, calculating a time at which the background transfer process is

to be completed, based on the bandwidth allocated by the second allocation means, and

5   displaying the calculated time.

8.   (Original) The nonlinear broadcast system of Claim 3,

wherein each transfer process for broadcast is a process for reading the material data from

the recording medium, organizing the read material data so as to be in a format suitable for a

streaming-type delivery, and performing the streaming-type delivery, and

5   each background transfer process is a process for reading the material data from the

recording medium, organizing the read material data so as to be in a format suitable for a download-type delivery, and performing the down-load type delivery.

9. (Original) The nonlinear broadcast system of Claim 1,

wherein the available amount calculation means calculates the available amount, every time when one of (a) a time that is a predetermined duration before a start time of each duration shown by the duration information and (b) an end time of each duration shown by the duration

5   information is reached.

10. (Previously Presented) A hardware resource allocation method for performing hardware resource allocation for processes, in a nonlinear broadcast system in which material data are broadcasted by executing a plurality of transfer processes of the material data for broadcast in parallel for at least a certain duration, the transfer processes for broadcast utilizing a

5   common hardware resource,

the nonlinear broadcast system including material storage means that is a recording medium storing a video data file including the material data, cache means that is a memory temporarily storing the material data read from the recording medium, processing target specification information storage means storing processing target specification information that

10   specifies which range in a video data file is indicated by the material data that is a processing target of each of the plurality of transfer processes, and duration information storage means storing duration information showing durations, in each of which a different one of the transfer processes for broadcast is scheduled to be executed,

the hardware resource allocation method comprising:

15   a first allocation step for allocating a required amount of the hardware resource to each

transfer process for broadcast based on the processing target specification information for the

corresponding duration shown by the duration information;

an available amount calculation step for calculating an available amount of the hardware

resource remaining after the required amount has been allocated to each transfer process for

20   broadcast in the first allocation step; and

a second allocation step for allocating, to one or more background transfer processes that

are processes other than the transfer processes for broadcast, as much amount of the hardware

resource as possible, so as not to exceed the calculated available amount, wherein

the nonlinear broadcast system includes process execution means for executing (a) each

25   transfer process for broadcast utilizing the amount of hardware resource allocated by the first

allocation step, and (b) each background transfer process utilizing the amount of hardware

resource allocated by the second allocation step,

the hardware resource is a band for an access to the recording medium,

when processing targets of the plurality of transfer processes indicate a same range in a

30   same video data file, the first allocation step does not exceptionally allocate the required amount

of the hardware resource to one of the plurality of transfer processes executed in a later duration,

and

the process execution means executes the transfer process to which the required amount

of the hardware resource is not exceptionally allocated, by accessing the cache means to read the

35   material data instead of accessing the recording medium.

11.   (Original) The hardware resource allocation method of Claim 10,

wherein in the available amount calculation step, the available amount of the hardware

resource is calculated every time when one of a start time and an end time of each duration

shown by the duration information is reached.

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12.   (Original) The hardware resource allocation method of Claim 11,

wherein the material storage means included in the nonlinear broadcast system is a

readable and writable recording medium,

the hardware resource is a band for an access to the recording medium,

5   in the first allocation step, a required bandwidth of the band is allocated to each transfer

process for broadcast,

in the available amount calculation step, an available bandwidth is calculated by

subtracting the bandwidth allocated to each transfer process for broadcast in the first allocation

step from a total bandwidth of the band for the access to the recording medium, and

10   in the second allocation step, as much bandwidth of the band as possible is allocated to

each background transfer process, so as not to exceed the calculated available bandwidth.

13.   (Original) The hardware resource allocation method of Claim 12,

wherein each background transfer process is a process for writing the material data to the

recording medium, and

each transfer process for broadcast is a process for reading the material data from the

5   recording medium.

14.   (Original) The hardware resource allocation method of Claim 12,

wherein each transfer process for broadcast is a process for reading the material data from

the recording medium, organizing the read material data so as to be in a format suitable for a

streaming-type delivery, and performing the streaming-type delivery, and

5   each background transfer process is a process for reading the material data from the

recording medium, organizing the read material data so as to be in a format suitable for a

download-type delivery, and performing the down-load type delivery.

15.   (Original) The hardware resource allocation method of Claim 10,

wherein in the available amount calculation step, the available amount is calculated every

time when one of (a) a time that is a predetermined duration before a start time of each duration

shown by the duration information and (b) an end time of each duration shown by the duration

5 information is reached.

16.   (Previously Presented) A program for making a nonlinear broadcast system that

has a program execution function execute a hardware resource allocation control procedure, the

nonlinear broadcast system broadcasting material data by executing a plurality of transfer

processes of the material data for broadcast in parallel for at least a certain duration, the transfer

5 processes for broadcast utilizing a common hardware resource,

the nonlinear broadcast system including material storage means that is a recording

medium storing a video data file including the material data, cache means that is a memory

temporarily storing the material data read from the recording medium, processing target

specification information storage means storing processing target specification information that

10   specifies which range in a video data file is indicated by the material data that is a processing

target of each of the plurality of transfer processes, and duration information storage means

storing duration information showing durations, in each of which a different one of the transfer

processes for broadcast is scheduled to be executed,

the hardware resource allocation control procedure comprising:

15   a first allocation step for allocating a required amount of the hardware resource to each

transfer process for broadcast for the corresponding duration shown by the duration information;

an available amount calculation step for calculating an available amount of the hardware

resource remaining after the required amount has been allocated to each transfer process for

broadcast in the first allocation step; and

20   a second allocation step for allocating, to one or more background transfer processes that

are processes other than the transfer processes for broadcast, as much amount of the hardware

resource as possible, so as not to exceed the calculated available amount, wherein

the nonlinear broadcast system includes process execution means for executing (a) each

transfer process for broadcast utilizing the amount of hardware resource allocated by the first

25   allocation step, and (b) each background transfer process utilizing the amount of hardware

resources allocated by the second allocation step,

the hardware resource is a band for an access to the recording medium,

when processing targets of the plurality of transfer processes indicate a same range in a

same video data file, the first allocation step does not exceptionally allocate the required amount

30   of the hardware resource to one of the plurality of transfer processes executed in a later duration,

and

the process execution means executes the transfer process to which the required amount

of the hardware resource is not exceptionally allocated, by accessing the cache means to read the

material data instead of accessing the recording medium.

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17.   (Original) The program of Claim 16,

wherein in the available amount calculation step, the available amount of the hardware

resource is calculated every time when one of a start time and an end time of each duration

shown by the duration information is reached.

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18.   (Original)   The program of Claim 16,

wherein in the available amount calculation step, the available amount is calculated every

time when one of (a) a time that is a predetermined duration before a start time of each duration

shown by the duration information and (b) an end time of each duration shown by the duration

5   information is reached.

19.   (Previously Presented) The nonlinear broadcast system of Claim 1 further

comprising a hardware resource allocation schedule including

processing target specification information,

an allocation type indicating to start reproduction of the processing target specification

5   information, or to end reproduction of the processing target specification information,

an allocation time to start reproduction of the processing target specification information,

or to end reproduction of the processing target specification information,

a resource ID indicating a hardware resource to start reproduction of the processing target

specification information, or to end reproduction of the processing target specification

10   information, and

a total occupancy indicating a total amount of the hardware resource used after starting

reproduction of the processing target specification information, or ending reproduction of the

processing target specification information.

20. (Previously Presented) The nonlinear broadcast system of Claim 19 further

comprising a hardware resource utilization schedule including

processing target specification information,

an allocation time to start reproduction of the processing target specification information,

5   an allocation time to end reproduction of the processing target specification information,

a duration of the reproduction of the processing target specification information,

a resource ID indicating a hardware resource used for reproduction of the processing

target specification information,

a maximum value indicating the maximum amount of resource available for a hardware

10   specified by the resource ID, and

an occupancy indicating an amount of the hardware resource used for reproduction of the

processing target specification information.

21. (Currently Amended) The nonlinear broadcast system of Claim 20 further comprising

an editing list including

processing target specification information,

a program identification corresponding to the processing target specification information,

5   track information corresponding to the processing target specification information,

an allocation time to start reproduction of the processing target specification information,

an allocation time to end reproduction of the processing target specification information,

and

a duration of the reproduction of the processing target specification information.